

As an initial matter, it is noted that Applicants have submitted a certified copy of the priority document, Taiwan Application No. 90112864. Attached hereto are papers filed in the U.S. Patent & Trademark Office on January 3, 2002, including a Transmittal of Certified Copies, the cover page of the priority document, and the return postcard stamped by OIPE with a date of receipt of February 5, 2002. It is respectfully requested that receipt of the priority document be acknowledged.

The drawings were objected to because "in Figure 9 reference character 19 denotes two separate and distinct parts on the figure" (Office Action, page 2). It is presumed that the Examiner is referring to FIG. 2. Attached is a Letter to Official Draftsman, accompanied by proposed corrections to FIG. 2, whereby the lead lines have been extended to clarify that reference number 19 is pointing to the encapsulating material (see also page 3, second paragraph of the specification). It is respectfully requested that the drawing objections be withdrawn.

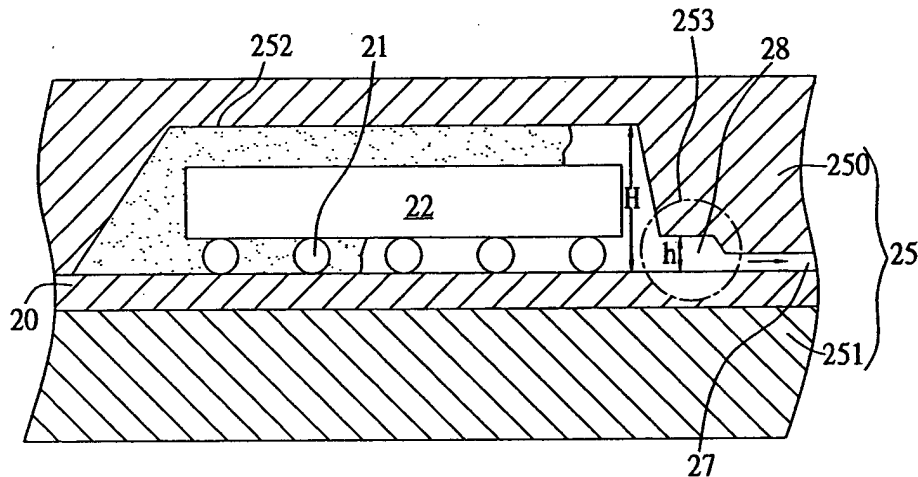
The title has been amended to clearly reflect the invention to which the elected claims are drawn. It is respectfully requested that the objection to the title be withdrawn.

Claim 12 was objected to because of the language "for injecting," and it was recommended in the Office Action to replace "for" with "by". Applicants believe that the original language is more clearly descriptive of the invention as recited in claim 12. The molded underfilling technique is described in the specification on page 7, second paragraph, and is a specific technique for injecting the molding compound that can be utilized in the Applicants' invention. As described in the specification, the molded underfilling technique implies more than just "injecting the molding compound," and therefore using the word "for" is believed to be more precise. It is respectfully requested that the claim objection be withdrawn.

Applicants claim a semiconductor package including a substrate mounted with at least one semiconductor chip thereon; and an encapsulant formed by a molding compound injected into a molding cavity of a mold, wherein the molding cavity includes a plurality of recess portions each connected to an air vent formed in the mold.

Applicants' invention is exemplified by the following copy of FIG. 5.

FIG. 5



As shown in FIG. 5, a substrate 20 having a semiconductor chip 22 mounted thereon is placed in a mold 25, which consists of upper mold 250 and lower mold 251. A plurality of recess portions 28 are formed at corner positions 253 of a molding cavity 252. The recess portions 28 are connected to air vents 27, and each recess portion 28 has a height h smaller than a height H of the molding cavity 252 (see specification at page 7, second paragraph).

The above-described semiconductor package can yield significant benefits. When a molding resin is injected into the molding cavity and flows into the recess portions, the molding resin would rapidly absorb heat from the mold, thereby increasing the viscosity and reducing the flow rate of the molding resin. The slowed-down molding resin can therefore be prevented from flashing out of the air vents, thereby avoiding the resin flash problem encountered in the prior art (as illustrated in FIG. 2).

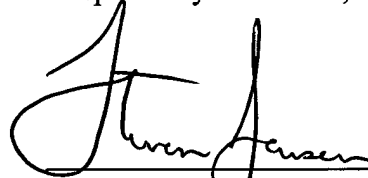
Claims 8-12 were rejected under 35 USC 103(a) as being unpatentable over "Prior Art Figures 1-2" in view of U.S. Patent 6,173,490 to Lee et al. (hereinafter "Lee"). This rejection is respectfully traversed.

Lee fails to teach or suggest a semiconductor package having a plurality of recess portions, each of which are connected to an air vent. In Lee, a mark is provided through the use of a marking structure 500 in a mold (FIG. 3), thereby forming an indent 620 (FIG. 4A) in the encapsulated package to facilitate package orientation (see column 4, lines 31-54). The marking structure 500 "takes the form of a small nub formed in the top surface of each package recess" (column 4, lines 41-42), and the indent 620 is "a pin one marker" (column 4, lines 45-46).

In Lee, the indent 620 is provided on the top surface of the package for mark identification, but is not connected to the air vent for preventing resin flash. Lee discloses the use of "gas vents" 290, but there is no teaching or suggestion of providing a plurality of recess portions, each connected to an air vent. The indent 620 of the encapsulated package in Lee does not facilitate heat absorption and flow-rate reduction of a resin compound, as discussed above with reference to the Applicants' claimed invention. Moreover, in Lee, the resin compound is not injected into the marking structure 500/indent 620.

It is believed the application is in condition for immediate allowance, which action is earnestly solicited.

Respectfully submitted,



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